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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,286	07/18/2003	Brian Michael Finn	11150/75	4199

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EXAMINER	
FAULK, DEVONA E	
ART UNIT	**PAPER NUMBER**
2615	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/623,286	FINN ET AL.	
	Examiner	Art Unit	
	Devona E. Faulk	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 January 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *5,7 and 8* is/are allowed.

6)☒ Claim(s) *1-4,6 and 9-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12/15/2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Claims 3-8 were indicated as allowable and the applicant has rewritten the claims in independent form. Claims 5,7 and 8 remain in allowable form.

2. The indicated allowability of claims 3,4 and 6 is withdrawn in view of the newly discovered reference(s) to Venkatech. Rejections based on the newly cited reference(s) follow.

3. Applicant's arguments with respect to claims 1,2,9,11,24,24 and 30 have been considered but are moot in view of the new ground(s) of rejection.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1-4 6,9,10,25-34 are provisionally rejected on the ground of nonstatutory double patenting over claims 1-4,29-36 of copending Application No. 10/360889. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: The claims of 10/623286 are broader than claims 1-4,29-36 of 10/360889 and as such anything that reads on the narrower claims of 10/360889 would read on the broader claims.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-4,6,9,10,25-34 rejected under 35 U.S.C. 102(e) as being anticipated by Venkatesh et al. (US 6,674,865).

8. Claims 1 and 6 share common features.

Regarding claims 1 and 6, Venkatesh discloses a method for operating a voice-supported system in a motor vehicle, the system including at least one microphone, at least one loudspeaker, and a bandpass filter arranged between the microphone and the loudspeaker (microphones 18,20,22 and loudspeakers 26 and 28;Figures 2,11 and 26; column 4, line 58-column 5, line 3; column 22, line 66-column 23, line 55), comprising:

determining a power of the signal as a function of frequency (column 22, line 66-column 23, line 55; column 26, lines 32-66); and

adjusting the bandpass filter at least as a function of a derivative of the power of the signal with respect to frequency (Figures 6 and 12; column 22, line 66-column 23, line 55; column 26, lines 32-66).

Regarding claim 6, Venkatesh further discloses adjusting the bandpass filter as a function of at least one local maximum power of the signal as a function of the frequency (column 26, lines 32-66)

Regarding claim 2, Venkatesh wherein the voice-supported system includes at least one of a communications device, an intercom device, a two-way intercom device, and a duplex telephony device (Venkatesh teaches of a two way device in a vehicle; column 9, lines 20-65).

All elements of claims 9,10 and 25 are comprehended by the rejection of claim 1.

Claims 3 and 4 share common features.

Regarding claims 3 and 4, Venkatesh discloses a method for operating a voice-supported system in a motor vehicle, the system including at least one microphone, at least one loudspeaker, and a bandpass filter arranged between the microphone and the loudspeaker ((microphones 18,20,22 and loudspeakers 26 and 28;Figures 2,11 and 26; column 4, line 58-column 5, line 3; column 22, line 66-column 23, line 55), comprising:

determining a power of a signal as a function of frequency (column 22, line 66-column 23, line 55; column 26, lines 32-66);

adjusting the bandpass filter at lest one of a function of at least one local maximum of the power of the signal as a function of the frequency and as a function of a derivative of the power of the signal with respect to frequency (Figures 6 and 12; column 22, line 66-column 23, line 55; column 26, lines 32-66); and

determining the local maximum of the power of the signal as a function of the derivative (and first derivative of claim 4) of the power of the signal with respect to frequency(Figures 6 and 12; column 22, line 66-column 23, line 55; column 26, lines 32-66)..

Regarding claims 26,29 and 30, Venkatesh discloses a device for operating a voice-enhancement system, comprising:

at least one microphone (microphones 18,20 and 22, Figure 2);

at least one loudspeaker configured to reproduce a signal generated by the microphone (loudspeakers 26 and 28);

a bandpass filter arranged between the microphone and the loudspeaker (Figures 6 and 12; column 22, line 66-column 23, line 55; column 26, lines 32-66). ;

and decision logic configured to adjust the bandpass filter at least as a function of a derivative of a power of the signal with respect to frequency (Figures 6 and 12; column 22, line 66-column 23, line 55; column 26, lines 32-66).

Regarding claims 29 and 30, Venkatesh further discloses an arrangement (means for determining) configured to determine a power of the signal as a function of frequency (column 22, line 66-column 23, line 55; column 26, lines 32-66).

All elements of claims 27 and 28 are comprehended by the rejection of claim 26.

All elements of claims 25,31-34 are comprehended by the rejection of claims 1,26,29 and 30 respectively.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 11-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Venkatesh et al. (US 6,674,865) in view of Ando (US 6,252,969).

Regarding claims 11-24,Venkatesh discloses adjusting the bandpass filter (see page 10 for description of what Ando discloses, how it applies to claims 11-24 and motivation to combine with Venkatesh).

Venkatesh fails to disclose wherein the bandpass filter is adjusted in the adjusting step to block a portion of the signal at a notch frequency only when a ratio at least of the power of the signal at a frequency at which the power of the signal is a maximum to an average value of the power of the signal at additional frequencies of the signal is greater than a feedback-power threshold (claim 11);

wherein the bandpass filter is adjusted in the adjusting step to block a portion of the signal at a notch frequency only when a ratio at least of the power of the signal at a frequency at which the power of the signal is a maximum to an average value of the power of the signal at additional frequencies of the signal is greater than a feedback-power threshold for longer than a time-ratio-threshold (claim 12);

wherein the bandpass filter is adjusted in the adjusting step to block a portion of the signal at a notch frequency only when a ratio of the power of the signal at a frequency at which the power of the signal is a maximum plus the power of the signal at frequencies of the signal adjacent to the frequency at which the power of the signal is a maximum to an average value of the power of the signal at additional frequencies of the signal is greater than a feedback-power threshold (claim 13);

wherein the bandpass filter is adjusted in the adjusting step to block a, portion of the signal at a notch frequency only when a ratio of the power of the signal at a

frequency at which the power of the signal is a maximum plus the power of the signal at frequencies of the signal adjacent to the frequency at which the power of the signal is a maximum to an average value of the power of the signal at additional frequencies of the signal is greater than a feedback-power threshold for longer than a time-ratio-threshold (claim 14);

wherein the bandpass filter is adjusted in the adjusting step to block a portion of the signal at a notch frequency only when a ratio of the power of the signal at a frequency at which the power of the signal is a maximum plus the power of the signal at a frequency of the signal that is directly adjacent to the frequency at which the power of the signal is a maximum and at which the power is greater than at a frequency that is also directly adjacent to the frequency at which the power of the signal is a maximum to an average value of the power of the signal at additional frequencies of the signal is greater than a feedback-power threshold (claim 15);

wherein the bandpass filter is adjusted in the adjusting step to block a portion of the signal at a notch frequency only when a ratio of the power of the signal at a frequency at which the power of the signal is a maximum plus the power of the signal at a frequency of the signal that is directly adjacent to the frequency at which the power of the signal is a maximum and at which the power is greater than at a frequency that is also directly adjacent to the frequency at which the power of the signal is a maximum to an average value of the power of the signal at additional frequencies of the signal is greater than a feedback-power threshold for longer than a time-ratio-threshold (claim 16);

wherein the bandpass filter is adjusted in the adjusting step to block a portion of the signal at a notch frequency only when a ratio of the power of the signal at a frequency at which the power of the signal is a maximum plus the power of the signal at a frequency of the signal that is directly adjacent to the frequency at which the power of the signal is a maximum and at which the power is greater than at a frequency that is also directly adjacent to the frequency at which the power of the signal is a maximum to an average value of the power of the signal of all further frequencies of the signal is greater than a feedback-power threshold (claim 17);

wherein the bandpass filter is adjusted in the adjusting step to block a portion of the signal at a notch frequency only when a ratio of the power of the signal at a frequency at which the power of the signal is a maximum plus the power of the signal at a frequency of the signal that is directly adjacent to the frequency at which the power of the signal is a maximum and at which the power is greater than at a frequency that is also directly adjacent to the frequency at which the power of the signal is a maximum to an average value of the power of the signal of all additional frequencies of the signal is greater than a feedback-power threshold for longer than a time-ratio-threshold (claim 18);

further comprising determining the feedback-power threshold as a function of an output signal of the bandpass filter (claim 19);

wherein the bandpass filter is adjusted in the adjusting step to block a portion of the signal at a notch frequency only when a ratio of the power of the signal at a

frequency at which the power of the signal is a maximum to an average value of the power of the signal at further frequencies at which the power of the signal includes a local maximum is greater than a power threshold (claim 21);

wherein the bandpass filter is adjusted in the adjusting step to block a portion of the signal at a notch frequency only when a ratio of the power of the signal at a frequency at which the power of the signal is a maximum to an average value of the power of the signal at all further frequencies at which the power of the signal includes a local maximum is greater than a power threshold (claim 22);

Ando discloses calculating the power of adjacent frequency bands of the input signal and their ratios compared to power thresholds and determining the feedback-power threshold as a function of an output signal of the bandpass filter (column 4, line 13-column 5, line 36; Figure 1). It would have been obvious to modify claims 11-19,21,22 to adjust the bandpass filter as recited respectively in claims 11-24 in order to prevent howling which can at times accompany a sound produced by a loudspeaker.

Regarding claims 20,23 and 24, Venkatesh as modified by Ando discloses wherein the power threshold is one of between 20 and 50 and between 30 and 40 (as the rear speaker being near 33 dB snr- Figure 10).

Allowable Subject Matter

11. Claims 5,7 and 8 are allowed.

Regarding claim 5, the prior art or combination thereof fails to disclose or make obvious further comprising: forming a slope signal from a first derivative of the power of the signal with respect to the frequency having a first binary value when the first derivative

of the power of the signal with respect to frequency is greater than or equal to zero and a second binary value when the first derivative of the power of the signal with respect to frequency is less than zero; and determining the local maximum of the power of the signal as a function of a first derivative of the slope signal.

Regarding claim 7, the prior art or combination thereof fails to disclose or make obvious further comprising forming a slope signal having a first binary value when a first derivative of the power of the signal with respect to frequency is greater than or equal to zero and a second binary value when the first derivative of the power of the signal with respect to frequency is less than zero, the bandpass filter adjusted in the adjusting step as a function of the slope signal.

Claim 8 is allowed due to dependency on claim 7.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devona E. Faulk whose telephone number is 571-272-7515. The examiner can normally be reached on 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848.

The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2615. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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